Title (en)

POLYAMIDE RESIN FOAM PARTICLES, POLYAMIDE RESIN FOAM PARTICLE MOLDED ARTICLE, AND METHOD FOR PRODUCING POLYAMIDE RESIN FOAM PARTICLES

Title (de)

POLYAMIDHARZSCHAUMPARTIKEL, GEFORMTER GEGENSTAND AUS POLYAMIDHARZSCHAUMPARTIKELN UND VERFAHREN ZUR HERSTELLUNG VON POLYAMIDHARZSCHAUMPARTIKELN

Title (fr)

PARTICULES DE MOUSSE DE RÉSINE DE POLYAMIDE, ARTICLE MOULÉ EN PARTICULES DE MOUSSE DE RÉSINE DE POLYAMIDE, ET PROCÉDÉ DE PRODUCTION DE PARTICULES DE MOUSSE DE RÉSINE DE POLYAMIDE

Publication

**EP 4108715 A4 20240313 (EN)**

Application

**EP 21757785 A 20210201**

Priority

- JP 2020025728 A 20200218
- JP 2021003604 W 20210201

Abstract (en)

[origin: EP4108715A1] Provided are polyamide-based resin expanded beads capable of providing a molded article of polyamide-based resin expanded beads having more excellent moldability than in the past, a molded article of polyamide-based resin expanded beads molded using the polyamide-based resin expanded beads, and a method for producing the polyamide-based resin expanded beads.The polyamide-based resin expanded beads contain a polyamide-based resin as a base material resin, wherein: the polyamide-based resin expanded beads have a crystal structure in which an intrinsic peak of the polyamide-based resin and a high-temperature peak having a peak top temperature on a higher temperature side than a peak top temperature of the intrinsic peak appear in a DSC curve obtained under a predetermined condition 1; a amount of heat of fusion of the high-temperature peak is within a range of 5 J/g or more and 50 J/g or less; and a coefficient of variation of the amount of heat of fusion of the high-temperature peak is 20% or less. The polyamide-based resin expanded beads are produced by in-mold molding of the polyamide-based resin expanded beads. A method for producing the polyamide-based resin expanded beads includes: an expanding agent applying step of impregnating a polyamide-based resin dispersed in an aqueous dispersion medium in a sealed container with an expanding agent to obtain expandable polyamide-based resin beads; and an expanding step of releasing the expandable polyamide-based resin beads from the sealed container under a pressure lower than a pressure in the sealed container to expand the polyamide-based resin beads. In the expanding step, when the expandable polyamide-based resin beads are released from the sealed container, a temperature in the sealed container is adjusted to be raised at a rate of 0.3°C or higher and 1.5°C or lower per 10 minutes.

IPC 8 full level

**C08J 9/16** (2006.01); **B29C 44/34** (2006.01); **C08J 9/12** (2006.01); **C08J 9/18** (2006.01); **C08J 9/232** (2006.01); B29K 77/00 (2006.01)

CPC (source: EP US)

**B29C 44/3461** (2013.01 - EP); **C08J 9/122** (2013.01 - EP); **C08J 9/16** (2013.01 - US); **C08J 9/18** (2013.01 - EP); **C08J 9/232** (2013.01 - EP); B29K 2077/00 (2013.01 - EP); C08J 2203/06 (2013.01 - EP); C08J 2205/052 (2013.01 - EP); C08J 2377/00 (2013.01 - EP); C08J 2377/06 (2013.01 - US)

Citation (search report)

- [XA] JP 2018043490 A 20180322 - ASAHI KASEI CORP
- [XA] JP 2017066279 A 20170406 - SEKISUI PLASTICS
- [XA] YEH SHU-KAI ET AL: "Carbon Dioxide-Blown Expanded Polyamide Bead Foams with Bimodal Cell Structure", INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol. 58, no. 8, 28 January 2019 (2019-01-28), pages 2958 - 2969, XP093126081, ISSN: 0888-5885, DOI: 10.1021/acs.iecr.8b05195
- See references of WO 2021166623A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

**EP 4108715 A1 20221228**; **EP 4108715 A4 20240313**; CN 115210306 A 20221018; CN 115210306 B 20240213; JP 2021130755 A 20210909; JP 7398294 B2 20231214; US 2023053755 A1 20230223; WO 2021166623 A1 20210826

DOCDB simple family (application)

**EP 21757785 A 20210201**; CN 202180015452 A 20210201; JP 2020025728 A 20200218; JP 2021003604 W 20210201; US 202117794760 A 20210201